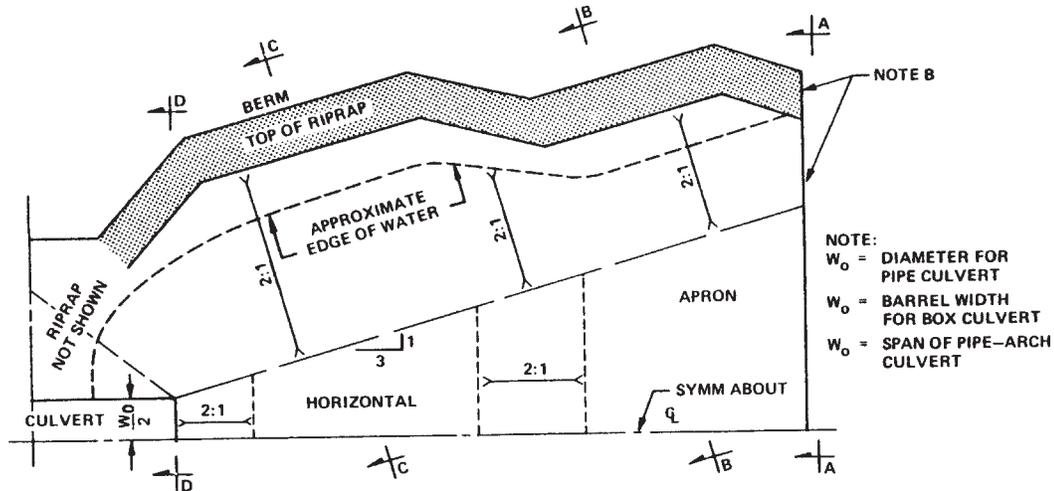


# Standard Detail & Specifications

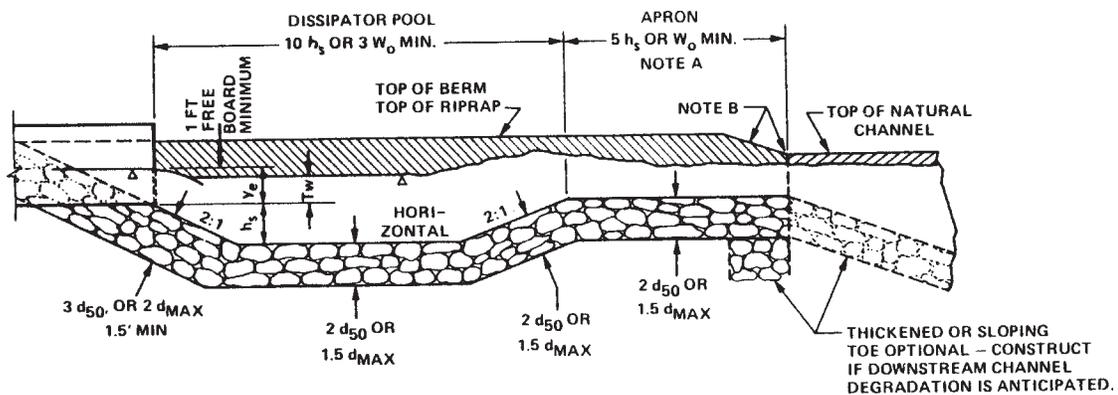
## Riprap Stilling Basin



Half - Plan

NOTE A - IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS-SECTIONAL AREA AT SECTION A-A SUCH THAT  $Q_{des}/(CROSS\ SECTION\ AREA\ AT\ SEC.\ A-A) = SPECIFIED\ EXIT\ VELOCITY$ .

NOTE B - WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT THE SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A.



Profile thru  $\phi$  Basin

Source:

Adapted from  
FHWA HEC-14

Symbol:



Detail No.

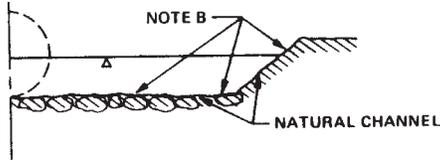
**DE-ESC-3.3.11**

Sheet 1 of 3

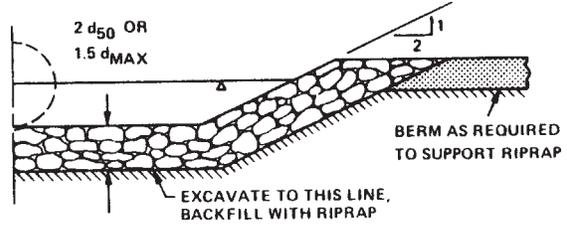
Effective July 2023

# Standard Detail & Specifications

## Riprap Stilling Basin

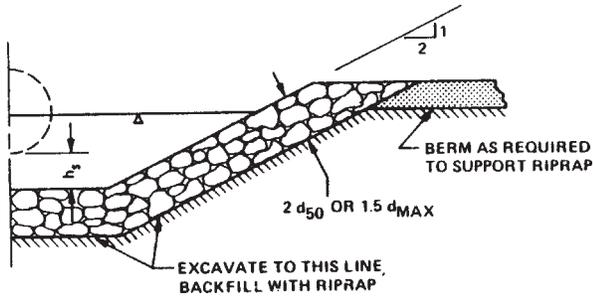


Section A-A

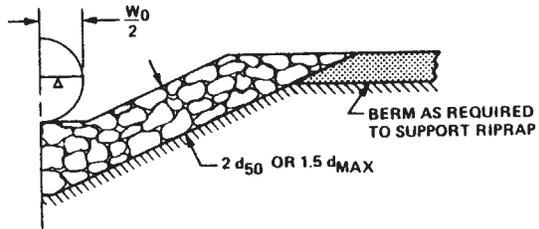


Section B-B

NOTE B - WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT THE SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A.



Section C-C



Section D-D

DATA

Culvert dimension ( $w_0$ )  
 Depth of basin from culvert invert ( $h_b$ )  
 Riprap size (R No.)

Source:

Adapted from  
 FHWA HEC-14

Symbol:



Detail No.

**DE-ESC-3.3.11**

Sheet 2 of 3

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## Standard Detail & Specifications

# Riprap Stilling Basin

### Construction Notes:

1. The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The riprap shall conform to the grading limits as shown on the plan.
3. Geotextile shall be a Type GS-I. Fabric shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire section.
4. Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the geotextile fabric. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

Source:

Adapted from  
FHWA HEC-14

Symbol:



Detail No.

**DE-ESC-3.3.11**

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Effective July 2023